In the Claims:

Please amend the claims in accordance with the following claim list:

1. (Currently amended) A method of synthesising electrocardiographic (ECG) signals ~~by~~ comprising receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals and deriving at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a desired set of signals, wherein the first group of electrodes comprises the standard 12 lead electrode sites V2 and V5 plus at least one electrode positioned substantially level with V5 on the right anterior auxiliary line, and at least one further electrode positioned on each of the right hand side and left hand side of the body

2. (Original) A method as claimed in claim 1 wherein the electrode sites are located at:
V2: the standard 12 lead electrode site V2;
V5: the standard 12 lead electrode site V5;
V5R: level with V5 on the right anterior auxiliary line;
RA: the standard 12 lead electrode site RA (arm, shoulder, wrist or hand); and
LA: the standard 12 lead electrode site LA (arm, shoulder, wrist or hand).

3. (Original) The method of claim 1, wherein said further electrodes on the right hand side and left hand side of the body are placed on the torso substantially level with the upper portion of the limbs.

4. (Currently amended) A method as claimed in claim 1 ~~or 3~~ wherein the electrode sites are located at:
V2: the standard 12 lead electrode site V2;
V5: the standard 12 lead electrode site V5;
V5R: level with V5 on the right anterior auxiliary line;
R: anywhere in the region of the right hand side of the body, between the front upper chest above the level of the heart and the right arm, shoulder or hand; and

L: anywhere in the region of the left hand side of the body, between the front upper chest above the level of the heart and the left arm, shoulder or hand.

5. (Original) A method as claimed in claim 3 wherein the electrode sites are located at:
V2: the standard 12 lead electrode site V2;
V5: the standard 12 lead electrode site V5;
V5R: level with V5 on the right anterior auxiliary line;
RC: on the upper chest of the body, at the same height as the manubrium and on the right mid-clavicle line; and
LC: on the upper chest of the body, at the same height as the manubrium and on the left mid-clavicle line.

6. (Currently amended) A method for obtaining a set of ECG signals as claimed in ~~any preceding~~ claim 1 wherein the electrode position V2 is replaced by an electrode position Vc which is defined to be on the sternum directly between the standard electrode sites V1 and V2.

7. (Currently amended) The method as claimed in ~~any preceding~~ claim 1, further ~~including~~comprising deriving an ECG signal from a temporary electrode that is not connected for the full duration the ECG measurement.

8. (Currently amended) The method as claimed in claim 7, further comprising generating a subject-specific transformation or set of transformations acting on the ECG signals to synthesise a representation of the temporary electrode signal after disconnection of the temporary electrode.

9. (Currently amended) The method of claim 7 ~~or~~ 8 wherein the temporary electrode is reactivated or reapplied at a later time in order to redefine the subject-specific transformations.

10. (Currently amended) The method of ~~any of~~ claims 7~~, 8 and 9~~ further ~~including~~ comprising defining a reference potential for each temporary electrode from one of the following options: the electrical potential of an ECG electrode; the electrical potential of a different

temporary electrode or a potential formed by a combination of ECG electrode(s) and/or temporary electrode(s).

11. (Currently amended) The method of ~~any of~~ claims 7 ~~to 10~~ wherein a temporary ECG signal is defined as the potential difference between the potential at the temporary electrode and its reference potential.

12. (Currently amended) The method as claimed in ~~any of~~ claims 7 ~~to 11~~ further comprising obtaining a set of ECG signals from both the first set of ECG signals and the temporary electrode signal.

13. (Original) A method as claimed in claim 12 wherein the temporary signal(s) is synthesised using subject-specific transformations on the second set of ECG signals.

14. (Currently amended) The method as claimed in ~~any of~~ claims 7 ~~to 13~~ further comprising obtaining a second set of ECG signals from the subject using just the first group of electrodes.

15. (Currently amended) A method as claimed in ~~any of~~ claims 7 ~~to 14~~ wherein further ECG signals are derived using a predetermined transformation or set of transformations on the set comprised from, or a subset selected from, the second set of ECG signals and at least one synthesised temporary electrode signal.

16. (Currently amended) A method as claimed in ~~any of~~ claims 7 ~~to 15~~ wherein at least one temporary electrode is located at any point on the right arm, shoulder or hand.

17. (Currently amended) A method as claimed in ~~any of~~ claims 7 ~~to 16~~ wherein at least one temporary electrode is located at any point on the left arm, shoulder or hand.

18. (Currently amended) A method as claimed in ~~any of~~ claims 7 ~~to 17~~ wherein the temporary electrode(s) are connected at a different time from when the first set of ECG signals is

acquired, or equivalently, activated temporarily, and the subject-specific transformations retrospectively calculated.

19. (Currently amended) A method as claimed in ~~any of~~ claim~~s~~ 7 ~~to 18~~ wherein a temporary electrode, after initial use, is used to perform functions other than that of supplying electrocardiogram signal data.

20. (Currently amended) The method of ~~any of~~ claim~~s~~ 7 ~~to 19~~ wherein an input connection to a measurement means or device used to obtain a signal from an ECG electrode(s) has a secondary use to obtain a signal from a temporary electrode.

21. (Currently amended) The method of ~~any preceding~~ claim 1 wherein the method ~~includes~~ further comprises switching an electrode between separate modes of operation wherein in a first mode, the electrode measures an ECG signal and in a second mode, the electrode forms a reference electrical connection between a subject and an ECG measurement means.

22. (Currently amended) The method of ~~any preceding~~ claim 1 further ~~including the steps of~~comprising:

applying a plurality of electrodes on a subject's body to enable the measurement of a set of ECG signals for that subject;

detecting subject's body posture; and

selecting or modifying the set of transformations on the basis of the subject's body posture.

23. (Currently amended) The method of ~~any preceding~~ claim 1 wherein the body posture is detected by an accelerometer, tilt sensor or manual switch.

24. (Currently amended) The method of ~~any preceding~~ claim 1, further ~~including~~comprising the steps of:

calculating a simulation matrix for at least one temporary signal from the first set of data or a subset thereof;

applying a simulation matrix to the second set of ECG signals to generate a simulated temporary signal; and

applying a fixed derivation matrix to the second data set plus the simulated signal to define an unmeasured ECG lead; and

adapting one or both of said matrices to compensate for subject specific variations in posture and movement.

25. (Original) The method of claim 24 wherein the method of deriving unmeasured ECG signals comprises forming a matrix R which contains data points from the measured ECG signals, calculating a solution matrix A from the temporary electrode signals, and calculating a matrix sX using sX(i)=R*A(i).

26. (Original) The method of claim 25 wherein a matrix M is formed from the first set of ECG signals plus the simulated temporary electrode signals, and further comprising-forming a derived matrix dL(x)=M*B(x), where B(x) is a predetermined solution matrix and dL(x) simulates the data that would have been observed at an unmeasured electrode site.

27. (Currently amended) The method as claimed in ~~any preceding~~ claim 1 wherein the method further comprise~~s~~ing measuring a first set of ECG signals, processing said signals to derive a standard 12 lead ECG and displaying said standard 12 lead ECG in real time.

28. (Currently amended) The method as claimed in ~~any of~~ claim~~s~~ 1 ~~to 26~~ wherein the first set of ECG signals is recorded and stored for later processing to derive a standard 12 lead ECG.

29. (Original) The method claimed in claim 28 further comprising displaying the derived standard 12 lead ECG signal.

30. (Original) A method for obtaining a set of electrocardiographic (ECG) signals of the general type comprising synthesising ECG signals by receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals and deriving at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a desired set of signals, wherein said first group includes at least electrodes located at the following sites:

R and L: placed on or near the right and left upper limbs respectively; and

Vc: placed on the sternum.

31. (Original) A method as claimed in claim 30 wherein sites R and L comprise specifically sites RC and LC placed at the same level as the manubrium on the right and left mid-clavicular lines respectively.

32. (Original) A method as claimed in claim 30 wherein sites R and L comprise sites RA and LA placed on the right arm and left arm respectively.

33. (Currently amended) A method as claimed in ~~any of~~ claims 30 ~~to 32~~ wherein site Vc is located on the sternum directly between the standard electrode sites V1 and V2.

34. (Currently amended) A method for obtaining a set of ECG signals of the general type comprising synthesising electrocardiographic (ECG) signals by receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals and deriving at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a desired set of signals, wherein said first group includes at least electrodes ~~a~~ located at the following sites:

Vm: one of the standard 12 lead electrode sites V4, V5 and V6 (m = 4, 5 or 6);

VnR: level with one of the standard electrode sites V4, V5 and V6 (n = 4, 5 or 6) on the right midclavicular line, right anterior auxiliary line or right midauxiliary line respectively; and

Vc: placed on the sternum.

35. (Original) A method as claimed in claim 34 wherein m=n, so that VnR is opposite Vm and is therefore easier to place.

36. (Original) A method as claimed in claim 35 wherein in a preferred embodiment, m=n=5, so that the sites Vm and VnR are V5 and V5R respectively.

37. (Currently amended) A method as claimed in claims 34~~, 35 or 36~~ wherein Vc is be located directly between the standard electrode sites V1 and V2.

38. (Currently amended) A method as claimed in ~~any of~~ claims 30 ~~to 39~~ wherein at least five electrode sites are chosen.

39. (Currently amended) The method as claimed in ~~any of~~ claims 30 ~~to 38~~wherein the method ~~includes~~further comprises deriving an ECG signal from a temporary electrode that is not connected for the full duration the ECG measurement.

40. (Original) A method for obtaining a set of electrocardiographic (ECG) signals by:

receiving signals from a first group of electrodes connected to predetermined locations on a human body to acquire a first set of ECG signals;

synthesising at least one further ECG signal using predetermined transformation(s) on said first set of ECG signals or a subset thereof to form a synthesised set of ECG signals, each synthesised signal corresponding to a location on the body (hereinafter referred to as the synthesised location);

detecting the body's posture; and

selecting or modifying the transformations used in said synthesising step on the basis of the detected body posture, so as to reduce posture-induced inaccuracies between each synthesised signal and a real signal that would be measured at the synthesised location in a given posture.

41. (Original) The method of claim 40 wherein the body posture is detected using an accelerometer, tilt sensor or manual switch.

42. (Currently amended) An apparatus for synthesising ECG data comprising means arranged to receive measured ECG signals and signal processing means arranged to perform the method steps according to ~~any of~~ claims 1[[-41]].

43. (Original) The apparatus as claimed in claim 42 wherein said signal processing means 15 arranged to implement a linear combination processing array for processing said digitised signals to derive a standard 12 lead ECG.

44. (Currently amended) An apparatus as claimed in claim 42 ~~or 43~~ wherein said signal processing means is implemented using a general purpose microprocessor or digital signal processor circuit under software control.

45. (Currently amended) The apparatus as claimed in claim 42~~, 43 or 44~~ wherein the apparatus comprises separate units for processing and displaying ECG signals respectively~~,~~ and means for interfacing the separate units for processing and displaying the ECG signals.

46. (Original) A system for measuring ECG signals comprising a synthesising apparatus as claimed in claim 42 in combination with means for storing signals from a subset of the group of electrodes, said synthesising apparatus being operable to process the stored signals from said subset of electrodes to obtain a standard 12 lead ECG.

47. (Original) The system as claimed in claim 46 further comprising a set of leads corresponding specifically to said subset of electrodes for obtaining said signals for storage and processing.

48. (Currently amended) The system as claimed in claim 46 ~~or 47~~ wherein the means for storing said signal data ~~includes~~comprises a removable storage medium.

49. (Currently amended) A storage device carrying program instructions for causing a general purpose microprocessor or digital signal processor circuit to implement a method as claimed in ~~any of~~ claims ~~1 to 41~~.

50. (New) An apparatus for synthesising ECG data comprising means arranged to receive measured ECG signals and signal processing means arranged to perform the method steps according to claim 30.

51. (New) A storage device carrying program instructions for causing a general purpose microprocessor or digital signal processor circuit to implement a method as claimed in claim 30.

52. (New) An apparatus for synthesising ECG data comprising means arranged to receive measured ECG signals and signal processing means arranged to perform the method steps according to claim 34.

53. (New) A storage device carrying program instructions for causing a general purpose microprocessor or digital signal processor circuit to implement a method as claimed in claim 34.

54. (New) An apparatus for synthesising ECG data comprising means arranged to receive measured ECG signals and signal processing means arranged to perform the method steps according to claim 40.

55. (New) A storage device carrying program instructions for causing a general purpose microprocessor or digital signal processor circuit to implement a method as claimed in claim 40.

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